DOCUMENT RESUME

ED 363 988 EC 302 556

AUTHOR Stocking, Vicki B.; And Others
TITLE Perceptions of Competence of Academically Talented Boys and Girls.
PUB DATE 28 Feb 92
NOTE 35p.; Paper presented at the Annual Esther Katz Rosen Symposium on the Psychological Development of Gifted Children (2nd, Lawrence, KS, February 28, 1992).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Academically Gifted; Grade 7; Junior High Schools; Junior High School Students; *Self Esteem; *Self Evaluation (Individuals); *Sex Differences; *Student Attitudes; Talent Identification

ABSTRACT

This investigation examined the perceptions of competence in various domains that academically talented seventh-graders hold in comparison with peers of the same and opposite gender. Subjects included 1,294 participants in the Duke University Talent Identification Program Talent Search. A Likert-type scheme and multifactor repeated measures were used to compare students' perceptions of their competence in 12 areas: (1) English/writing, (2) social studies, (3) foreign languages, (4) art/music, (5) home economics, (6) mathematics, (7) science, (8) computer programming, (9) vocational skills, (10) athletics, (11) leadership, and (12) school in general. Boys and girls rated their abilities favorably in comparison with others of either gender in most areas of comparison. Boys' and girls' perceptions varied in many areas, and in most, girls perceived higher competence than did boys. Both boys and girls perceived their own competence higher in comparison to boys than to girls in most areas. The study did not find the expected case of low perceptions of competence for females in such areas as mathematics and science. (Contains 42 references.) (Author/DB)

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Perceptions of Competence of Academically Talented Boys and Girls

Vicki B. Stocking
Duke University
Talent Identification Program

Scott H. Oppler
American Institutes for Research
Washington, D. C.

Laura C. Porter and David Goldstein
Duke University Talent Identification Program

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Presented at the Second Annual Esther Katz Rosen Symposium on the Psychological Development of Gifted Children, Univ. of Kansas, February 28, 1992.

Running head: ACADEMICALLY TALENTED STUDENTS' PERCEPTIONS OF COMPETENCE

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Abstract

This investigation focuses on the perceptions of competence in various domains (i.e., academic, social, and athletic) that academically talented seventh-graders hold in comparison with peers of the same and opposite gender. Subjects included 1,294 participants in the Duke University Talent Identification Program Talent Search. Students compared their perceptions of competence in 12 areas of comparison to other boys and girls using a Likert-type scheme. We used multi-factor repeated measures analysis of variance techniques. Boys and girls rated their abilities favorably in comparison with others of either gender in most areas of comparison. Boys' and girls' perceptions varied in many areas, and in most,.girls perceived higher competence than boys. Perceptions of competence were higher in comparison to boys than to girls in most areas. Many of the differences found in this investigation, though statistically significant, may not be of much practical significance.

Perceptions of competence of academically talented boys and girls

Conceptions of self are based on social comparisons with relevant others (e.g., Marsh, 1985; Ruble, Boggiano, Feldman, & Loebl, 1980). Adolescents' conceptions of self have been studied in a variety of forms (e.g., self-esteem, self-concept, and perceptions of competence, or self-concept of ability), with adolescents in general (e.g., Marsh, 1989; Marx & Winne, 1978; Simmons, Rosenberg, & Rosenberg, 1973) and academically talented youngsters in particular (e.g., Hansen & Hall, 1985; Hollinger, 1985; Janos, Fung, & Robinson, 1985; Olszewski, Kulieke, & Willis, 1987). Some studies suggest that the dimensions of self-concept or self-esteem may vary with gender (e.g., Byrne & Shavelson, 1987; Marsh, Barnes, Cairns, & Tidman, 1984; Marsh, Parker, & Barnes, 1985; O'Malley & Bachman, 1979) or gender role orientation (e.g., Lamke, 1982; Wells, Peltier, & Glickauf-Hughes, 1982). Some findings have indicated higher levels of self-esteem for boys than girls, (e.g., O'Malley & Bachman, 1979), while other have found no gender difference (Trowbridge, 1972). The possible role played by "androgyny," the occurrence of both masculine and feminine traits, in adjustment and self-esteem has also been examined (e.g., Antill & Cunningham, 1979; Hollinger, 1985; Marsh, Antill & Cunningham, 1987; Marsh & Jackson, 1986).

The investigation reported here addresses perceptions of competence that academically talented students hold within certain contexts. Perceptions of competence are the beliefs students hold about their ability to reach certain goals or perform certain tasks. Attributions of success and failure and expectancies for future success are related to this construct (see Eccles, 1983; Stipek & Gralinski, 1991). Positive perceptions of competence are important in maintaining motivation

toward a given goal (Ford, 1987), and studies have suggested that perceived competence in a given area predicts expectations for success in that area (Stipek & Gralinski, 1991) as well as future achievement in that area (Jacobs, 1991; Stevenson & Newman, 1986).

Studies have suggested differing perceptions of competence within academic domains for boys and girls (Ryckman & Peckham, 1987; Stevenson & Newman, 1986). Stipek and Gralinski (1991) found that junior high school boys rated their competence in math higher than girls, expected better grades on a math test than girls, and expected to do better relative to their classmates than girls did. Boys attributed a good outcome on a math test to ability more often than girls did, and girls attributed a poor outcome to lack of ability more often than boys. Other work has found that girls tend to have relatively pessimistic attributions about mathematics and science compared to language arts or social studies, and boys have fairly optimistic beliefs about both types of school subjects, despite girls' higher grades in math (Jacobs, 1991) or no differences in prior math achievement or standardized test scores (Eccles, 1983; see Meece, Parsons, Kaczala, Goff, & Futterman, 1982, for a review). Similarly, Kramer (1991) found that a group of gifted girls believed that the gifted boys in the same program were "smart" and had ability, while they themselves (the girls) simply had "potential."

Perceptions vary in other domains as well; some studies have suggested that adolescent boys have a more positive perception of their physical abilities than girls (e.g., Marsh, 1985, 1989), and it has been suggested that adolescent boys stress competition and achievement more heavily than girls (O'Malley & Bachman, 1979), although some studies (Snyder & Kivlin, 1975) of adult women indicate more

positive self-perceptions for athletes than non-athletes (see also Luthar, Zigler, & Goldstein, 1991).

The literature suggests that perceptions of competence or self concept follow a developmental sequence (e.g., Monge, 1973; Montemayor & Eisen, 1977; O'Malley & Bachman, 1983; Piers & Harris, 1964). At some point in their academic or social development, girls and boys develop attitudes about their own and others' abilities that are not necessarily positive and may have negative implications for future growth. Some studies indicate that students become more negative about math with age; older students (junior high school students versus elementary school students) had lower expectancies for current and future math performances, rated their math ability and math performance lower (Eccles, 1983; Jacobs, 1991), and saw present and future math courses as more difficult (Eccles, 1983). Some investigators have suggested that the "decline" in perceived competence may be due to a more realistic evaluation of the role of effort and ability in achievement (Stipek & Tannatt, 1984). Some studies have found gender-based negative achievement-related beliefs as early as third grade (Stipek & Gralinski, 1991), while others have not found self concepts in math that vary with gender in elementary school students but have found them in high school students (e.g., Meece, Parsons, Kaczala, Goff, & Futterman, 1982; see Eccles, 1983).

The study of these types of attitudes is important when considered in relation to future activities students undertake, such as course selection, choice of college major, and career decisions. For example, it has been suggested that participation in high school math and science is a strong predictor of majoring in those fields in college, with possibly varying patterns of predictors for males and

females (e.g., Ware & Lee, 1988). Considering the growing need for individuals versed in technical and academic fields, it would be valuable to identify patterns of academic interests in students as they develop (e.g., Benbow & Minor, 1986; Clark, 1988) and to document the development of negative attitudes and beliefs. This is especially true with respect to females, of whom the numbers currently working in or entering highly technical fields such as mathematics or the sciences are small. If some sort of developmental process is taking place through which males become differentiated from females in terms of career choice, it is important to identify at what point in a student's social, academic, or professional development that process takes place.

The investigation reported here focuses on the perceptions of competence in various domains (i.e., academic, social, and athletic) that academically talented seventh-graders hold in comparison with peers of the same and opposite gender. Put simply, how competent do talented girls think they are in relation to other girls and boys, within a given context? How competent do talented boys think they are in relation to other boys and girls, within a given context? Because the students of this investigation are in middle or junior high school, their responses will be especially informative, particularly in terms of documenting the development of relevant attitudes and beliefs. If we do not find the sex differences suggested in the literature, then perhaps the trend of females' negative reactions to science or mathematics has not yet started to occur, possibly due to the age of these students or the fact that they are exceptionally talented. However, if we do find patterns of perceptions that vary with gender and may relate to other negative processes, interventions aimed at steering females into math and science (for example) may

need to be implemented at an earlier point in time.

Method

Subjects

Participants for this study were selected through the Talent Search conducted by the Talent Identification Program (TIP) at Duke University. Through this Talent Search, which covers a 16 state region in the southeastern and midwestern United States, seventh graders who score in the top three percent on their in-school achievement tests are contacted through their schools and invited to take the Scholastic Aptitude Test (SAT) or American College Test (ACT); generally, 80 percent of these Talent Search applicants do take one of these tests during seventh grade. Scores on these tests determine eligibility for the Summer Residential Program (SRP), a three-week scholastic program held on the Duke University campus. Approximately six percent of the students taking either test subsequently qualify for the SRP. TIP provides all Talent Search applicants with a variety of publications (e.g., newsletters, magazines) and informative materials (e.g., listings of special educational programs) for four years, regardless of whether or not a given student takes the SAT or ACT or what score a student received on one of these tests.

The participants in this study were chosen from the 1991 Talent Search pool of 57,000 applicants. We randomly sampled 1,000 each White males and females, and 500 each non-White males and females, for a total of 3,000 students. Of the 1,500 males, 1,485 (98.9%) indicated some racial designation. Of these 1,485, 1,000 (67.34) were White, 178 (11.99%) were Black/African-American, 133 (8.96%) were Hispanic, 15 (1.01%) were Native Alaskan/Native American, 118

(7.95%) were Asian/Oriental/Pacific Islander, and the remainder (41; 2.77%) indicated "other." Of the 1,500 females, 1481 (98.7%) indicated some racial designation. Of these 1,481, 1,000 (67.52%) were White, 247 (16.68%) were Black/African-American, 121 (8.17%) were Hispanic, 12 (0.81%) were Native Alaskan/Native American, 64 (4.32%) were Asian/Oriental/Pacific Islander, and the remainder (37; 2.50%) indicated "other."

Of the 3,000 students that were contacted, 1,294 (43.2%) participated in this study by returning completed questionnaires. The resulting sample of 1,294 is representative of the mail-out sample of 3,000 in terms of gender and race. Of these 1,294, 628 (48.5%) were males and 666 (51.5%) were females, and 1,281 (98.8%) indicated some racial designation. Figure 1 illustrates the representativeness of the respondents to the mail-out sample in terms of race.

Insert Figure 1 about here

Subjects were solicited from each of the sixteen Talent Search states (Alabama, Arkansas, Florida, Georgia, Iowa, Kansas, Kentucky, Louisiana, Missouri, Mississippi, North Carolina, Nebraska, Oklahoma, South Carolina, Tennessee, and Texas). The TSQ respondents were representative of the mail-out sample in terms of state, as illustrated in Figure 2.

Insert Figure 2 about here

Instrumentation

Data were collected using the 1991 Talent Search Questionnaire (TSQ). Various generations of this questionnaire have served as the primary method of annual data collection for TIP over the course of the program's ten-year history. Historically, the TSQ has been administered to the entire pool of Talent Search applicants or some subset to address a particular question of interest. The 1991 version of the TSQ, the pilot for a future longitudinal project, built upon earlier versions of the TSQ and incorporated concepts found in other longitudinal work (e.g., Project TALENT, National Educational Longitudinal Study). TIP administers the Talent Search Questionnaire for research purposes only; the independence of completion of the TSQ and admittance to any of TIP's programs is stressed to the students and their parents.

The 1991 Talent Search Questionnaire is comprised of two separate questionnaires, one each for students and parents; only items from the Student Questionnaire were used for this investigation. The Student Questionnaire is a 240-item measure with items reflecting a variety of behavioral and attitudinal constructs, such as academic performance, interest in college majors, interest in occupations, and attitudes about school. Students indicate their responses to items on a computer-readable answer sheet.

One section of the TSQ addresses perceptions students hold about their competence relative to other boys and girls in specific domains. The items read as such:

* How do you compare with girls your own age in *each* of the following areas? (Please answer these, even if you are a boy.), and
* How do you compare with boys your own age in *each* of the following

areas? (Please answer these, even if you are a girl.)

Following each question is a list of twelve areas of comparison: English/writing, Athletics, Leadership, Social Studies, Computer programming, Vocational skills (drafting, etc.), Mathematics, Foreign language, Art/music, Home economics, Science, and School in general. These domains were chosen to reflect perceptions of competence in traditional academic disciplines (e.g., English, Math, Social Studies, Science), in areas to which students may just recently be exposed through curriculum (e.g., Computer programming, Vocational skills, Foreign language, Art/music, Home economics), and in other areas relevant to students of this age (Athletics, Leadership).

Students indicated their perceptions of competence in each area of comparison using the following scheme: A = Better than most girls (or boys, for the second set of items) my age, B = About the same as most girls (boys) my age, C = Not as good as most girls (boys) my age, D = I don't know.

Procedure

Questionnaire packets included a cover letter inviting participation, two consent forms, two questionnaires (one for parents and one for students), an answer sheet to match each questionnaire, and a printed return envelope. Packets were mailed in early February of 1991, and students were asked to return the answer sheets and signed consent forms by early March. Most of the questionnaires that were returned (1150; 38.3%) were received by early April. Those received between April and July were processed separately. The two samples were combined to form a larger sample of 1294 after comparisons indicated no differences in responses for the two groups.

Analysis

For this investigation, we were primarily interested in determining whether perceptions of competence differed according to the sex of the respondent, the sex of the comparison group, or both. To examine this, we used multi-factor repeated measures analysis of variance techniques, in which sex of respondent was used as a between-subjects factor, and sex of comparison group was used as a within-subjects (repeated measures) factor. The particulars of these analyses are described in greater detail in the results section.

Before conducting the analyses, one particular scoring issue had to be resolved. This issue concerned the scoring of the answer choice D, "I don't know." We believe that for several of the areas of comparison this response probably reflected lack of experience with a particular class or activity. Alternatively, choosing this response could signify a lack of willingness to make a comparison, even if the student has had experience in that area. Table 1 illustrates the percentages of students responding "I don't know" to each area of comparison; it is clear that Foreign Languages, Home Economics, and Vocational Skills are areas in which students are often unwilling or unable to make such a comparison.

Insert Table 1 about here

In practical terms, responding "I don't know" is essentially a neutral response to the item, and is therefore similar to answer choice B, "About the same as most girls (or boys, for the items asking for comparisons with boys) my age." Therefore, we combined the B and D responses for each item and coded the

responses along the following scale: 1 = Not as good as most girls (or boys) my age; 2 = About the same as most girls (or boys) my age; 3 = Better than most girls (or boys) my age.

Results

Table 2 shows the means and standard deviations of all comparisons made, with reference to sex of respondent and sex of comparison group. Figure 3 illustrates these means. Generally, these results indicate that both boys and girls rated their abilities favorably in comparison with others of either gender in most areas of comparison. Of these means, the only ones that indicated a level lower than 2 ("about the same as others my age") were the girl respondents' comparisons with boys in Athletics and the boy respondents' comparisons with girls in Home Economics.

Insert Table 2 and Figure 3 about here

As an initial step in analyzing the data summarized in Table 2, we conducted a three-way repeated measures multivariate analysis of variance. For this analysis, there was one between-subjects factor and two within-subjects factors. The between-subjects factor was sex of respondent (designated as SEX). The within-subjects factors were sex of comparison group (COMPSEX) and area of comparison (SUBJECT). There were 12 areas of comparison, and therefore 12 levels of comparison for that within-subjects factor. The results indicated significant main effects for sex of comparison group ($F(1,1133) = 47.33$, $p < .0005$) and area of comparison ($F(11,1123) = 167.94$, $p < .0005$). Although the

main effect for sex of respondent was not significant (F (1,1133) = 0.17, n.s.), significant interactions were found for SEX by SUBJECT (F (11,1123) = 53.90, p < .0005), COMPSEX by SUBJECT (F (11,1123) = 98.78, p< .005), and for the three-way interaction between SEX, COMPSEX, and SUBJECT (F (11,1123) = 2.95, p < .005). The significant SEX by SUBJECT interaction signifies that girls and boys compared themselves differently for some areas of comparison. Furthermore, the significant three-way interaction involving SEX, COMPSEX, and SUBJECT signifies that these differences in comparisons were moderated by the sex of the group to which the comparisons were made.

Given the significant findings of the multivariate analysis, we next conducted a series of two-way (COMPSEX by SEX) repeated measures analyses of variance, one for each of the 12 areas of comparison. Results of these analyses are summarized in Table 3. Significant main effects for sex of respondent (SEX) indicate that boys' and girls' perceptions of competence varied in English, Foreign Language, Art/Music, Home Economics, Computer Programming, Vocational Skills, Athletics, and School in General. The means in Table 2 indicate that girls' perceptions of competence were greater than boys' for the first four of these areas as well as for School in General. Similarly, significant main effects for sex of the comparison group (COMPSEX) indicated that students' perceptions varied according to this factor in the areas of English, Social Studies, Foreign Language, Art/Music, Home Economics, Mathematics, Science, Vocational Skills, Athletics, and School in General. Of these areas, perceptions of competence were higher in comparison to boys than to girls in all but Vocational Skills and Athletics. Finally, significant interactions between SEX and COMPSEX were found in the areas of

English, Art/Music, Mathematics, and School in General. These interactions indicate that differences between boys' and girls' perceptions of competence were moderated by the sex of the comparison group. For example, the difference between girls and boys regarding perceptions of competence in English were twice as great when the comparison group was girls (2.57 versus 2.23) as when the comparison group was boys (2.75 versus 2.57).

Insert Table 3 about here

It should be noted that many of the differences found in this investigation, though statistically significant, may not be of much practical significance. The repeated-measures design that was incorporated in the analyses, in combination with the large sample size, provided sufficient power to detect even very small differences. In many instances, that is exactly what we found--small, though statistically significant, differences. Comparisons in the area of Mathematics illustrate the distinction between statistical and practical significance for this study. Although males and females rated themselves more favorably against boys than against girls in math, the actual difference in means is quite small (see Table 2), with the four mean comparisons ranging from 2.56 to 2.66, a spread of 0.1 (approximately one-fifth of a standard deviation). In contrast, the differences in perceptions of competence in English were somewhat larger. For example, the difference between girls' and boys' perceptions of competence in English in comparison to girls was .34, or approximately one-half of a standard deviation.

Discussion

Perhaps the most important finding in this study is the fact that we did not find the case of low perceptions of competence for females in significant areas of study, particularly Mathematics and Science. In fact, just the opposite proved true: in most comparison areas, including mathematics and science, both females and males rated themselves higher against boys than against girls their age. Also, when holding comparison group constant, girls tended to rate themselves higher than did boys. The investigators infer from these patterns of comparisons, if anything, that both the males and females in this talented, seventh-grade sample consider the talents of girls in these areas more formidable in a comparison situation than boys' talents. Exactly what do these findings mean? The real importance of this study is not the documentation of differences, but the documentation of practical similarities in perceptions of competence. We note again that many of the statistically significant differences in this research may not represent practically significant differences.

It is unclear why these females do not consider their abilities lower than those of boys in these areas, when those differences have been documented. It is possible that these seventh-grade females have not had the negative experiences with mathematics and science that is sometimes documented with older (e.g., high school) students. Perhaps the answer lies in the fact that these students are a select group already "earmarked" as academically talented by their identification as Talent Search applicants. Or it could be that these students' comparisons were unrealistically high, perhaps due to some sort of "halo" effect resulting from high perceived competence in one area, a situation sometimes found with younger (i.e.,

elementary) students (e.g., Stipek & Tannat, 1984), although the fact that some students rated themselves lower on some dimensions than others tends to discount that explanation.

The case remains that there is a significant literature documenting the involvement and achievement of girls in traditionally sex-stereotyped curricula (i.e., mathematics and science; Reis, 1987; Strauss, 1988; see Armstrong, 1985, for a review). Even one of the most able groups of students, those selected to participate in the Duke University TIP Summer Residential Program, have been shown to choose courses along "traditional" gender lines, although males and females perform equally well in all courses (Stocking & Goldstein, in press). Concern has been expressed about females' low levels of perceived competence in the sciences and particularly in mathematics, a situation perhaps leading to lower participation of women in higher levels of study in these areas and future related occupations . At some point in their educational careers, many girls learn that they are not as good as boys in some areas. This study does not indicate how to avoid this process, but it does tell us that these negative beliefs are not necessarily always present in a given sample of students.

Where do we go from here? Research has documented the significant effect of parents' and teachers' beliefs about students' ability on students' perceived competence, future course-taking, and achievement behavior (Eccles, 1983; Jacobs, 1991; Reis, 1987; Stevenson & Newman, 1986; Ware & Lee, 1988). It is clear that programs must be established or encouraged that foster positive (although realistic) beliefs about competence in academic areas (e.g., Reis, 1987; Shakeshaft & Palmieri, 1978).

The study reported here is the pilot for future longitudinal work, which will be able to address at what point students begin to exhibit the negative perceptions of competence, if those negative processes do, in fact, occur. Perhaps we will begin to understand what types of interventions may be possible in preventing these processes, and at what point those interventions should be implemented for highest effectiveness.

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Author Notes

The research reported here was fully supported by the Duke University Talent Identification Program. The authors gratefully recognize the cooperation of the staff of the Talent Identification Program, with special thanks to Dr. Norman G. Peterson of the American Institutes for Research, and Dr. Doris Franklin and Ms. Jennifer Dyer of TIP for their assistance. Requests for reprints should be addressed to Vicki Stocking, Duke University Talent Identification Program, 1121 West Main Street, Suite 100, Durham NC 27701.

Table 1

Percentages of Girls and Boys Responding "I Don't Know" Instead of Making Comparisons in Specific Areas

	Comparisons with Girls[a]		Comparisons with Boys[b]	
Area of Comparison	Females	Males	Females	Males
English/writing	1.4	5.5	2.4	2.4
Social Studies	3.3	7.9	4.9	4.7
Foreign Languages	46.9	51.1	47.7	50.7
Art/Music	10.0	13.6	13.8	15.4
Home Economics	50.2	58.0	45.0	58.4
Mathematics	0.8	4.2	3.0	3.1
Science	1.7	5.0	3.2	3.4
Computer Programming	41.7	33.6	45.0	33.6
Vocational Skills	65.1	56.8	64.2	54.8
Athletics	4.7	6.5	6.7	3.2
Leadership	12.1	16.3	13.6	11.5
School in general	1.2	5.5	2.9	3.4

Table 2

Means and Standard Deviations of Comparisons of Skill with Girls and Boys as a Function of Sex of Respondent

Area of Comparison	Comparisons with Girls[a]		Comparisons with Boys[b]	
	Girl respondents	Boy respondents	Girl respondents	Boy respondents
	Mean (S.D.)	Mean (S.D.)	Mean (S.D.)	Mean (S.D.)
English/writing	2.57 (0.53)	2.23 (0.68)	2.75 (0.46)	2.57 (0.59)
Social Studies	2.42 (0.58)	2.45 (0.60)	2.57 (0.54)	2.58 (0.54)
Foreign Languages	2.24 (0.48)	2.12 (0.50)	2.30 (0.50)	2.21 (0.50)
Art/Music	2.47 (0.57)	2.27 (0.65)	2.53 (0.54)	2.40 (0.56)
Home Economics	2.17 (0.43)	1.90 (0.49)	2.38 (0.51)	2.13 (0.41)
Mathematics	2.61 (0.55)	2.56 (0.57)	2.63 (0.54)	2.66 (0.54)
Science	2.50 (0.55)	2.53 (0.57)	2.56 (0.53)	2.61 (0.53)
Computer Programming	2.19 (0.52)	2.40 (0.57)	2.17 (0.53)	2.40 (0.55)

(Continued on next page)

Table 2 (cont.)

Means and Standard Deviations of Comparisons of Skill with Girls and Boys as a Function of Sex of Respondent

Area of Comparison	Comparisons with Girls[a]		Comparisons with Boys[b]	
	Girl respondents	Boy respondents	Girl respondents	Boy respondents
	Mean (S.D.)	Mean (S.D.)	Mean (S.D.)	Mean (S.D.)
Vocational Skills	2.06 (0.37)	2.18 (0.50)	2.00 (0.43)	2.15 (0.47)
Athletics	2.11 (0.70)	2.64 (0.58)	1.63 (0.69)	2.12 (0.69)
Leadership	2.23 (0.59)	2.35 (0.60)	2.39 (0.59)	2.38 (0.61)
School in general	2.69 (0.48)	2.55 (0.53)	2.71 (0.47)	2.65 (0.50)

[a]Comparisons based on the following scale: 1 = Not as good as most girls my age; 2 = About the same as most girls my age; 3 = Better than most girls my age

[b]Comparisons based on the following scale: 1 = Not as good as most boys my age; 2 = About the same as most boys my age; 3 = Better than most boys my age

Table 3

Repeated-Measures Analysis of Variance of Comparisons of Skill with Girls and Boys

Area of comparison	SEX[a]	COMPSEX[b]	SEX * COMPSEX
English/writing	E (1,1200) = 76.97*** F > M	E (1,1200) = 285.09*** B > G	E (1,1200) = 19.97***
Social Studies	E (1,1200) = 0.63	E (1,1200) = 101.73*** B > G	E (1,1200) = 0.05
Foreign Languages	E (1,1178) = 14.82*** F > M	E (1,1178) = 42.53*** B > G	E (1,1178) = 3.35
Art/Music	E (1,1198) = 30.91*** F > M	E (1,1198) = 33.63*** B > G	E (1,1198) = 6.04*
Home Economics	E (1,1179) = 134.09*** F > M	E (1,1179) = 234.95*** B > G	E (1,1179) = 0.05
Mathematics	E (1,1198) = 0.14	E (1,1198) = 22.03*** B > G	E (1,1198) = 10.11**
Science	E (1,1194) = 2.67	E (1,1194) = 26.99*** B > G	E (1,1194) = 1.30

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Table 3 (cont.)

Repeated-Measures Analysis of Variance of Comparisons of Skill with Girls and Boys

Area of comparison	SEX[a]	COMPSEX[b]	SEX * COMPSEX
Computer Programming	E (1,1194) = 51.09*** M > F	E (1,1194) = 2.95	E (1,1194) = 0.02
Vocational Skills	E (1,1182) = 36.23*** M > F	E (1,1182) = 13.34*** G > B	E (1,1182) = 0.89
Athletics	E (1,1202) = 230.28*** M > F	E (1,1202) = 752.99*** G > B	E (1,1202) = 0.83
Leadership	E (1,1198) = 2.41	E (1,1198) = 0.20	E (1,1198) = 1.28
School in general	E (1,1195) = 14.81*** F > M	E (1,1195) = 23.39*** B > G	E (1,1195) = 13.81***

[a] M > F signifies that males compare themselves more positively than females. F > M signifies that females compare themselves more positively than males.

[b] B > G signifies that students compare themselves more positively against boys than girls. G > B signifies that students compare themselves more positively against girls than boys.

* $p < .05$ ** $p < .005$ *** $p < .0005$

Figure Caption

Figure 1. Percentages of Mail-out Sample and TSQ Respondents according to Race.

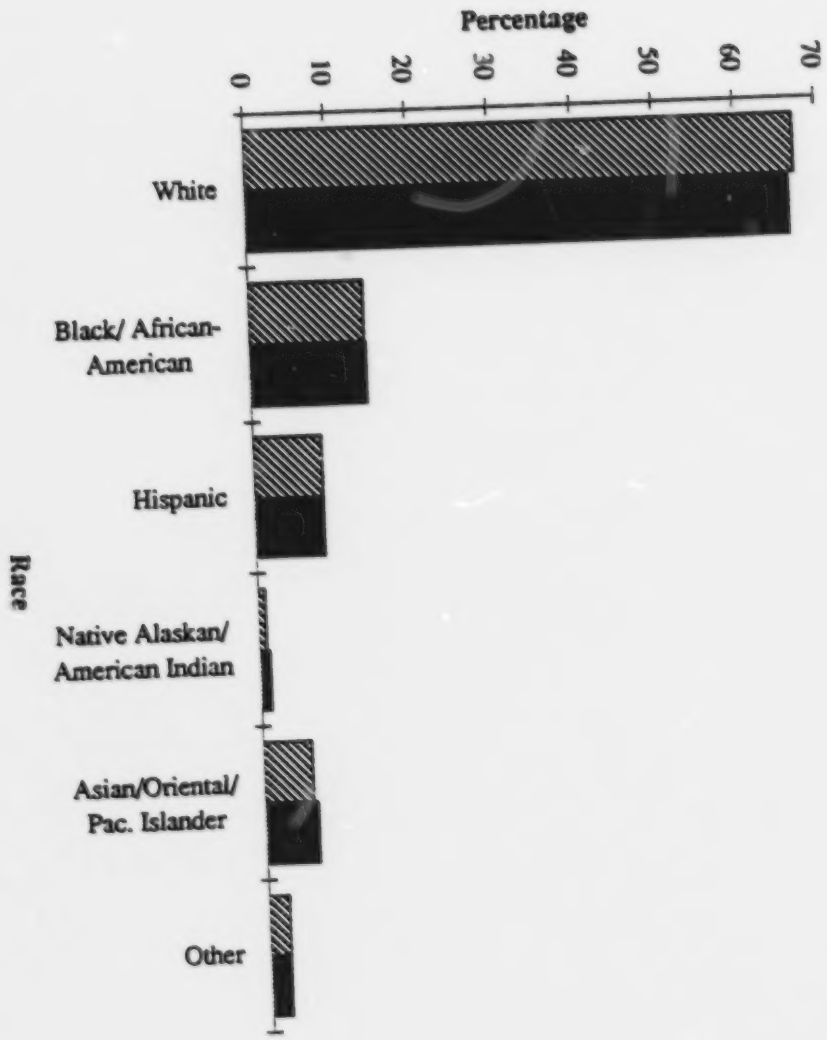
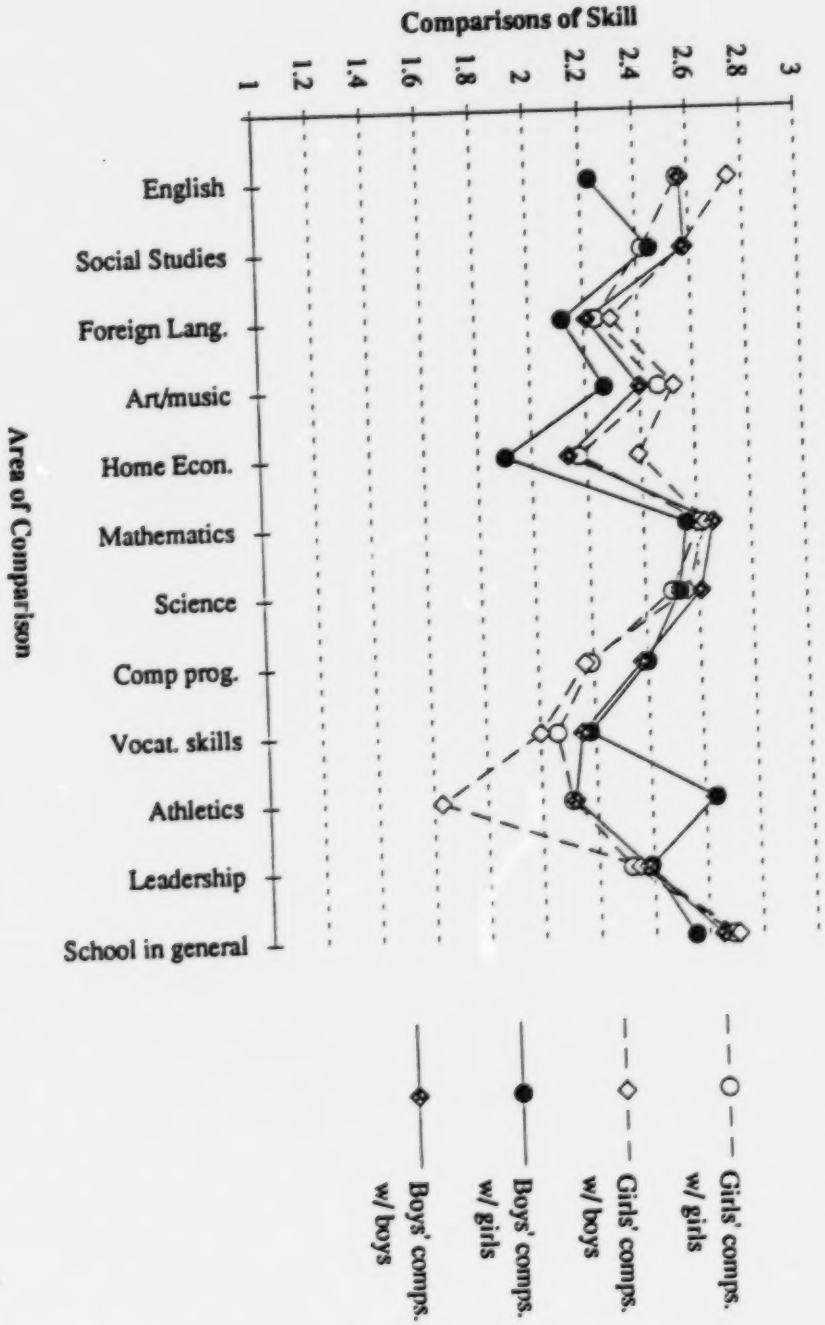

Percentage
0
10
20
30
40
50
60
70
White
Black/ African-American
Hispanic
Native Alaskan/ American Indian
Asian/Oriental/ Pac. Islander
Other
Race
Mail-out sample (N = 2966)
TSQ respondents (N = 1281)

Figure Caption

Figure 2. Percentages of Mail-out Sample and TSQ Respondents according to State.

Figure Caption

Figure 3. Comparisons of Skill with Girls and Boys, as a Function of Sex.


Comparisons of Skill
1
1.2
1.4
1.6
1.8
2
2.2
2.4
2.6
2.8
3
English
Social Studies
Foreign Lang.
Art/music
Home Econ.
Mathematics
Science
Comp prog.
Vocat. skills
Athletics
Leadership
School in general
Area of Comparison
Girls' comps. w/ girls
Girls' comps. w/ boys
Boys' comps. w/ girls
Boys' comps. w/ boys